



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

ally appreciated, although it was discovered in 1893 by Schröder (*Zs. physik. Chem.*, **11**, 449).

2. Another important use to which the general freezing-point-solubility law could be put would be in settling the frequently discussed question as to whether racemates exist as such in the liquid state, and if so, to what extent. This question could be most certainly and definitely decided for any given pair of optical isomers simply by determining the freezing-point diagram for the system and applying the general law. The exact amount of racemate present in the liquid state and the manner in which it varies with the temperature could also be computed; for a solution composed of two optical isomers forms one of the most perfect examples known of an ideal solution, and the laws of such solutions would apply with great exactness over the whole range of concentrations. In addition to the freezing-point diagram, the latent heats of fusion and the heat of dilution would also be needed in order to work out the problem completely. The main point which it is desired to emphasize here is simply that the ideal solution laws are capable of giving a complete and quantitative answer to such a question as this, an answer concerning the correctness of which no reasonable doubt could be felt.

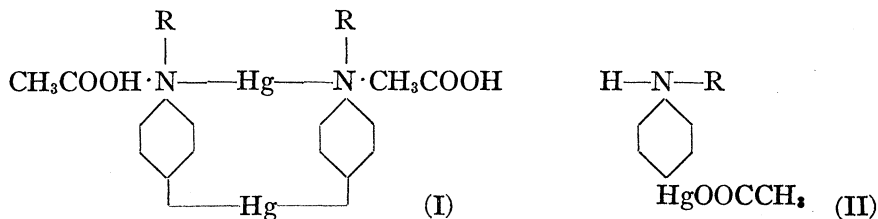
MERCURY DERIVATIVES OF AROMATIC AMINES. I. STRUCTURE OF PRIMARY AND SECONDARY *p*-AMINO-PHENYLMERCURIC COMPOUNDS

By Walter A. Jacobs and Michael Heidelberg

ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH, NEW YORK

Presented to the Academy, February 17, 1915

During the year 1902, the question of the structure of the mercury derivatives of the aromatic amines was the occasion of a polemic between L. Pesci¹ and O. Dimroth.² The former ascribed the complex structure (I) to the mercuriated primary and secondary amines ($R = H$ or alkyl), while Dimroth advocated the simple monomolecular formula (II), basing his views upon arguments which Pesci was unable to controvert. Subsequent workers have used the monomolecular formula



indicated by Dimroth's reasoning, although no evidence of a direct nature was adduced and only the reactions of the mercury were considered in assigning the formula. It seemed to the writers that a study of the amino group in these compounds would furnish more direct evidence as to the structure than any at hand, for, obviously, a compound of the formula (I), where $R = H$, could not undergo the reactions characteristic of the primary amino group. This work was therefore undertaken as a preliminary phase of a more extended study of the mercuriated aromatic amines. It was found possible to prove formula (II) for *p*-aminophenylmercuric acetate by demonstrating the presence of the primary amino group in two ways: (1) the formation of a salicylidene derivative; (2) the ready formation of a diazo solution, from which were prepared the azo dyes with dimethylaniline, diethylaniline, phenol, resorcin, and α -naphthylamine-5-sulfonic acid. It was also found possible to prove the monomolecular structure of *p*-methylaminophenylmercuric acetate by demonstrating the presence of a secondary amino group through the preparation of the nitroso derivative. A more detailed discussion and a description of the compounds prepared will appear in the *Journal of Biological Chemistry*.

¹ *Zs. anorg. Chem.*, **32**, 227 (1902).

² *Berlin, Ber. D. chem. Ges.*, **35**, 2038 (1902); *Zs. anorg. Chem.*, **33**, 311 (1902).

MOLECULAR REARRANGEMENTS OF TRIPHENYLMETHANE DERIVATIVES. I. GENERAL DISCUSSION

By Julius Stieglitz

KENT CHEMICAL LABORATORY, UNIVERSITY OF CHICAGO

Read before the Academy, December 9, 1914. Received, February 20, 1915

Introduction.—In most chemical actions taking place at moderate temperatures, a change affecting an atom or a group of atoms in a molecule leaves the remaining atoms in undisturbed relations to one another. This stability of groupings of atoms led, especially in the domain of organic chemistry, to the theory of the structure of molecules and underlies our methods for determining these structures. Occasionally, however, the study of the product of a reaction shows that a profound rearrangement of the grouping of atoms in a reacting molecule has taken place. Molecular rearrangements of this kind are of special interest for the reason that their study should shed some light, from a purely chemical side, on the forces holding atoms in place in molecular structures. The evidence thus obtained should aid in the study of these forces by purely physical means.